

REMARKS

Reconsideration of the Rejections of the Office Action and allowance of the claims are respectfully requested in view of Applicants' remarks below.

Allowable Subject Matter

Applicants thank the Examiner for allowing Claims 19 and 20 in the previous Office Action. Applicants have amended Claims 1, 2, and 16 to incorporate the recitations of Claims 19 and 20 and have canceled Claims 19 and 20. Applicants have also incorporated the recitations of Claim 10, which was not allowed, into Claims 1, 2, and 16.

Remarks Regarding Amendments to the Specification

Applicants have amended the specification to capitalize trademarks where they appear. Applicant has also amended the specification to correct typos in the spelling of AEROSIL and in thixotropic in the table following paragraph [0065].

Remarks Regarding Claim Amendments

The amendments to the claims are supported throughout the application as filed. New claims 25 and 26 are supported throughout the specification, for example, in the original claims, and in paragraphs [0045] and [0046] of the application as filed.

No new matter is added by the claim amendments and new claims and the entry of the claim amendments are requested.

Remarks Regarding Elections/Restrictions

Claim 18 is marked as withdrawn to reflect its status.

Remarks Regarding Section 112 First Paragraph

Claims 7, 8, 11, 12, 14-17, and 20-24 stand rejected under 35 U.S.C. 112 second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the invention. Applicants traverse.

Solely in an effort to expedite prosecution, claims 7-12 are cancelled. Claims 14-16 and 24 are amended. Claims 14-16 have been amended to include the phrase "relative to the total weight of the radiation curable composition." Claim 24 has been amended in response to the examiner's rejections. Claims 17 and 20-24 depend on Claim 16 and thus should be definite since claim 16 is amended. For these reasons, withdrawal of these rejections is respectfully requested.

Remarks Regarding Section 102:

A claim is anticipated only if each and every limitation as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.

Verdegaal Bros. v. Union Oil Co. of Calif., 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is claimed. See *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Claims 1-6, 9, and 12-15 stand rejected under 35 U.S.C. 102 as allegedly anticipated by Lawton et al (US 2002/0106584). Applicants traverse.

Claims 6, 9, and 12 have been cancelled and thus the rejections against those claims are rendered moot.

Claims 1 and 2 have been amended to include a flow aid selected from the group consisting of polyacrylates, polyalkyleneoxide modified polydimethylsiloxane, and ethyl acrylate-2-ethylhexyl acrylate copolymer. This limitation was originally present in the now cancelled claim 10 and claim 19 which was not rejected under Section 102. Claims 3-5 and 13-15 depend upon claim 1 and therefore are no longer anticipated by Lawton.

For the reason stated above, withdrawal of the Section 102 rejection is requested because Lawton fails to disclose all of the limitations of the claimed invention.

Claims 1-6, 9, and 12-15 stand rejected under 35 U.S.C. 102 as allegedly anticipated by Melisaris et al (US 6099787). Applicants traverse.

Claims 6, 9, and 12 have been cancelled and thus the rejections against those claims are rendered moot.

Claims 1 and 2 have been amended to include a flow aid selected from the group consisting of polyacrylates, polyalkyleneoxide modified polydimethylsiloxane, and ethyl acrylate-2-ethylhexyl acrylate copolymer. This limitation was originally present in the now cancelled claim 10 and claim 19 which was not rejected under Section 102. Claims 3-5 and 13-15 depend upon claim 1 and therefore are no longer anticipated by Melisaris.

For the reason stated above, withdrawal of the Section 102 rejection is requested because Melisaris fails to disclose all of the limitations of the claimed invention.

Remarks Regarding Section 103

A claimed invention is unpatentable if the differences between it and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art. *In re Kahn*, 78 USPQ2d 1329, 1334 (Fed. Cir. 2006) citing *Graham v. John Deere*, 148 USPQ 459 (1966). The *Graham* analysis needs to be made explicitly. *KSR v. Teleflex*, 82 USPQ2d 1385, 1396 (2007). It requires findings of fact and a rational basis for combining the prior art disclosures to produce the claimed invention. See id. ("Often, it will be necessary for a court to look to interrelated teachings of multiple patents . . . and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue"). The use of hindsight reasoning is impermissible. See id. at 1397 ("A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon ex post reasoning"). Thus, a *prima facie* case of obviousness requires "some rationale,

articulation, or reasoned basis to explain why the conclusion of obviousness is correct.” *Kahn* at 1335; see *KSR* at 1396.

The Examiner made two separate 35 U.S.C. 103 rejections in view of Lawton et al. (US 2002/0106584) in the instant office action. Claims 1-6, 9 and 12-15 were grouped into a first rejection and Claims 7, 8, 10, 11, 16, 17 and 21-24 were grouped into a second rejection. Therefore, Claims 1-17 and 21-24 stand rejected under 35 U.S.C. 103 as allegedly obvious in view of Lawton et al. Applicants traverse each of the rejections.

Solely in an effort to expedite prosecution, claims 6-12 are cancelled. Applicant has amended claim 1 and 2 to comprise a thixotropic agent and a flow aid selected from the group consisting of polyacrylates, polyalkyleneoxide modified polydimethylsiloxane, and ethyl acrylate-2-ethylhexyl acrylate copolymer.

Briefly, it is the Examiner’s position that “Lawton et al. differ basically from the claimed invention as per the non-express disclosure of an embodiment directed to the specifically recited thixotropic agent (7 & 8), the specifically recited flow aid (leveling agent, 10 & 11) and the specifically recited contents governing the components of the viscosity reducible radiation curable composition (16).” Applicant disagrees.

The radiation curable compositions in Lawton are not designed to show thixotropic behavior and be applied in a stereolithography machine as in applicant’s invention. Moreover, applicant’s invention involves the use of a paste-like composition wherein Lawton is concerned with a low viscosity liquid radiation curable resin. As stated in applicant’s application for patent, applicant’s composition exhibits the requisite thixotropic behavior and surprisingly obtains a low yield stress by incorporating a flow aid selected from the group consisting of polyacrylates, polyalkyleneoxide modified polydimethylsiloxane, and ethyl acrylate-2-ethylhexyl acrylate copolymer.

Moreover, among other things, Lawton does not disclose or suggest the use of a flow aid. Contrary to the examiner’s assertion, the leveling agent disclosed in Lawton is not a flow aid and does not function as a flow aid. The role of a leveling agent is to

allow the surface of the resin to quickly become flat so as to allow a quicker sweep of the subsequent layer in a stereolithography process. Hence it modifies *resin surface energies*. Conversely, applicant has incorporated a flow aid rather than a leveling agent in order to obtain the surprising result of lowering the yield stress of a resin that exhibits sufficient thixotropic behavior. The role of a flow aid, in general, is to modify the intrinsic forces within the resin (as opposed to the surface of the resin as in the leveling agent) and modify the so-called intrinsic viscosity and/or Newtonian viscosity to allow the resin to flow in its bulk form. Applicant has found that the yield stress of a resin that exhibits sufficient thixotropic behavior is reduced when using a flow aid selected from the group consisting of polyacrylates, polyalkyleneoxide modified polydimethylsiloxane, and ethyl acrylate-2-ethylhexyl acrylate copolymer.

For the reasons stated above, withdrawal of this rejection is respectfully requested.

The Examiner made two separate 35 U.S.C. 103 rejections in view of Melisaris et al. (US 6099787). Claims 1-6, 9 and 12-15 were grouped into a first rejection and Claims 7, 8, 10, 11, 16, 17 and 21-24 were grouped into a second rejection. Therefore, Claims 1-17 and 21-24 stand rejected under 35 U.S.C. 103 as allegedly obvious in view of Melisaris et al. Applicants traverse each of these rejections.

Briefly, it is the examiner's assertion that "Melisaris et al. differ basically from the claimed invention as per the non-express disclosure of an embodiment directed to i) the specifically recited thixotropic agent (7&8); the specifically recited flow aid (10&11) and the specifically recited contents governing the components of the viscosity reducible radiation curable composition (16)." Applicant disagrees.

Applicant has amended claim 1 and 2 to comprise a thixotropic agent and a flow aid selected from the group consisting of polyacrylates, polyalkyleneoxide modified polydimethylsiloxane, and ethyl acrylate-2-ethylhexyl acrylate copolymer.

Melisaris is directed at an entirely different problem than applicant's invention. Melisaris intends to stabilize the viscosity of a liquid radiation curable composition by

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introducing viscosity stabilizers. On the other hand, applicant's invention applicant's composition exhibits the requisite thixotropic behavior and surprisingly obtains a low yield stress through the incorporation of flow aids.

Moreover, Melisaris does not disclose or suggest the use of a flow aid in combination with a thixotropic agent. Flow aids are not viscosity stabilizers and viscosity stabilizers are not flow aids. Flow aids do not have any impact on the viscosity stability of a radiation curable composition. The flow aid of applicant's invention is not filler as is the viscosity stabilizer is in Melisaris. Melisaris mentions the use of siloxanes only in relation to the epoxy compound and thus not in relation to any component that would act as a flow aid.

For the reasons stated above, withdrawal of this rejection is respectfully requested.

CONCLUSION

Having fully responded to the pending Office Action, Applicants submit that the claims are in condition for allowance and earnestly solicit an early Notice to that effect. The Examiner is invited to contact the undersigned if additional information is required.

Respectfully submitted,

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